## **SUPPLEMENTARY SECTION**

Supplement 1: Patient profiles Supplement 2: Survey content

Supplement 3: Characteristics of surgeons Supplement 4: Opinion towards the literature

Supplement 5: Results of the treatment choice affecting patient

## **Supplement 1: Patient profiles**

Profile 1 Unemployed



50 y **BMI 23** 

Complaints	
Pseudo-locking	825
VAS rest (0-100)	1
VAS weight bearing (0-100)	7
IKDC score (0-100)	85

Consultation

	1
Physical exam	
Flexion	140°
Extension	+5°
Joint effusion	-
Joint line tendemess	
McMurray	pain medial
Thessaly	

Physical therapy in last	t 3 months	
No		

MRI

meniscus

Lateral meniscus Intact

Kellgren-Lawrence (OA)

X-ray

Grade 1



Medial

Horizontal





Profile 2 Professional cook



**BMI 23** 

Consultation

Complaints	71
Pseudo-locking	150
VAS rest (0-100)	56
VAS weight bearing (0-100)	85
IKDC score (0-100)	57

jj
120°
+10°
+
medial
pain medial in 20°

1	Physical therapy in last 3 m	onths
Ī	No	

MRI

Medial Lateral meniscus meniscus

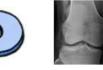
Horizontal tear



Intact

X-ray Kellgren-Lawrence (OA)

Grade 0



Profile 3 Functional manager



BMI 24

Consultation

Complaints	
Pseudo-locking	450
VAS rest (0-100)	52
VAS weight bearing (0-100)	60
IKDC score (0-100)	67
Physical exam	

Physical exam	
Flexion	140°
Extension	O°
Joint effusion	\$ <del>-</del> \$
Joint line tenderness	m edial and latera
Mc Murray	pain lateral
Thessalv	pain lateral in 5°

Physical th	rapy in last 3 months
No	- 17 P. 17 P

MRI

Medial meniscus

Intact

Lateral meniscus

Complex tear





X-ray Kellgren-Lawrence (OA)

Grade 1



2

## Administrative assistant

Profile 4



**BMI 23** 

## Consultation Complaints Pseudo-locking VAS rest (0-100) VAS weight bearing (0-100)

140°
0°
<u>6</u> €8
pain lateral
pain lateral in 5°

Physical t	therapy in last	3 m onths
No	556	T T



Medial meniscus

Intact

meniscus Complex

tear

Lateral

X-ray Kellgren-Lawrence (OA)

Grade 2







Profile 5 Fuel operator



The state of the s		
Complaints		
Pseudo-locking	2	
VAS rest (0-100)	84	
VAS weight bearing (0-100)	100	
IKDC score (0-100)	51	

Physical exam	
Flexion	135°
Extension	0°
Joint effusion	
Joint line tenderness	-
Mc Murray	2
Thessaly	pain medial in 5°

Physical therapy in last	3 months	
Yes, 11 session	57	

MRI

Medial Lateral meniscus meniscus Intact

Horizontal tear





Grade 0



Profile 6 Hotel manager



BMI 31

## Consultation

Complaints		
Pseudo-locking	+	
VAS rest (0-100)	45	
VAS weight bearing (0-100)	77	
IKDC score (0-100)	40	
Physical exam		

Physical exam	
Flexion	130°
Extension	0°
Joint effusion	+
Joint line tenderness	medial
Mc Murray	pain medial
Thessaly	pain medial in 5°

Physical therapy in las	t 3 months
No	

Medial meniscus

Horizontal tear



## MRI

Lateral meniscus

Intact



X-ray

Kellgren-Lawrence (OA)

Grade 1



## Profile 7 Taxi driver



**BMI 26** 

## Consultation

Complaints	
Pseudo-locking	+
VAS rest (0-100)	66
VAS weight bearing (0-100)	51
IKDC score (0-100)	38

Physical exam	
Flexion	120°
Extension	0°
Joint effusion	
Joint line tenderness	medial
Mc Murray	pain medial
Thessaly	-

Physical therapy in last	3 months	
No.	3 months	

## MRI

Lateral meniscus

Horizontal

Medial

meniscus







X-ray

Kellgren-

Lawrence (OA) Grade 1

Profile	8
Sculpto	or



**BMI 23** 

## Consultation

Complaints		
Pseudo-locking	5	
VAS rest (0-100)	69	
VAS weight bearing (0-100)	91	
IKDC score (0-100)	37	

Physical exam	j .
Flexion	130°
Extension	0°
Joint effusion	+
Joint line tenderness	medial
McMurray	pain medial
Thessaly	pain medial in 20

Physical therapy in last	3 months
No	

## MRI

Medial meniscus meniscus

Complex tear



Lateral







Profile 9 Upholsterer



BMI 25

## Consultation

Complaints		
Pseudo-locking	(#S	
VAS rest (0-100)	4	
VAS weight bearing (0-100)	93	
IKDC score (0-100)	26	

Physical exam	
Flexion	110°
Extension	0°
Joint effusion	
Joint line tenderness	
McMurray	
Thessaly	pain lateral in 5°

Physical therapy in last 3	3 months
Yes, 2 sessions	Color of Colors

## MRI

Medial meniscus

Intact

Radial tear

Lateral

meniscus



X-ray

Kellgren-Lawrence (OA) Grade 2



4

## Profile 10 Teacher primary school



BMI 27

Consultation	
5	
14	
68	
26	

Physical ex am	2.5
Flexion	130°
Extension	0°
Joint effusion	+
Joint line tenderness	medial
McMurray	·
Thessaly	pain medial in 5°

Physical therapy in last 3	3 months
Yes, 20 sessions	

## MRI

Medial

meniscus

Horizontal tear

Lateral meniscus





Grade 1





## Profile 11 Composer / musician



**BMI 33** 

## Consultation

Complaints	
Pseudo-locking	+
VAS rest (0-100)	19
VAS weight bearing (0-100)	61
IKDC score (0-100)	41
Physical exam	
F12.0000	4000

	2,63
Physical exam	
Flexion	130°
Extension	0°
Joint effusion	888
Joint line tenderness	medial
McMurray	pain medial
Thessaly	pain medial in 5°
Thessaly	pain lateral in 20°

Physical therapy	in last 3 months	
No	94	

MRI

Medial meniscus

Horizontal

tear



Lateral

X-ray Kellgren-Lawrence (OA)









## Profile 12

Unemployed



69 y **BMI 23** 

## Consultation

Complaints		
Pseudo-locking	+	
VAS rest (0-100)	48	
VAS weight bearing (0-100)	11	
IKDC score (0-100)	32	

Physical ex am	
Flexion	140°
Extension	+5°
Joint effusion	124
Joint line tenderness	lateral
McMurray	pain lateral
Thessaly	pain lateral in 5°

Physical therapy in la	st 3 months	
Yes, 4 sessions	3	

## MRI

Medial meniscus

Intact



## Lateral meniscus





X-ray Kellgren-Lawrence (OA)

Grade 2



## Profile 13 Unemployed



BMI 32

Complaints	
Pseudo-locking	(42)
VAS rest (0-100)	67
VAS weight bearing (0-100)	90
IKDC score (0-100)	13

Consultation

IKDC score (0-100)	13
Physical exam	
Flexion	130°
Extension	+5°
Joint effusion	+
Joint line tenderness	medial
McMurray	pain medial
Thessaly	· (#)

Physical therapy in last 3	months	
Yes, 2 sessions	:0	

## MRI

Medial meniscus

Horizontal

tear

Lateral meniscus

Intact



Grade 2







## Profile 14

Pharmacy assistant



**BMI 24** 

Consultation	
	_
+	
61	
57	
63	
	+ 61 57

Physical exam	
Flexion	140°
Extension	0°
Joint effusion	
Joint line tenderness	
McMurray	pain lateral
Thessaly	pain lateral in 5°

Physical therapy in last 3	months
No	9

MRI

Medial Lateral meniscus meniscus

Intact Horizontal

X-ray

Kellgren-Lawrence (OA)

Grade 1







## Profile 15

Civil servant



**BMI 22** 

Complaints	
Pseudo-locking	-
VAS rest (0-100)	25
VAS weight bearing (0-100)	81
IKDC score (0-100)	36

Consultation

Physical exam	Ţ.
Flexion	145°
Extension	0°
Joint effusion	+
Joint line tenderness	medial
McMurray	pain medial
Thessaly	pain medial in 5°

Physical therapy in last 3 mor	
Yes, 3 sessions	

Medial meniscus

Horizontal tear



MRI

Lateral meniscus

Horizontal tear



X-ray

Kellgren-Lawrence (OA)

Grade 1



## Profile 16 Saleswoman



**BMI 35** 

## Consultation

Com plaints	
Pseudo-locking	+
VAS rest (0-100)	12
VAS weight bearing (0-100)	64
IKDC sc ore (0-100)	49

Physical exam	
Flexion	135°
Extension	0°
Joint effusion	+
Joint line tendemess	medial
McMurray	pain medial
Thessaly	pain medial in 5°

Physical therapy in las	t 3 months
Yes, 9 sessions	

## MRI

Lateral meniscus





Grade 2



Medial

meniscus

Complex

tear





## Profile 17 Unemployed



BMI 26

## Consultation

Complaints		
Pseudo-locking	+	
VAS rest (0-100)	67	
VAS weight bearing (0-100)	90	
IKDC score (0-100)	33	

Physical exam	150	
Flexion	130°	
Extension	-5°	
Joint effusion	+	
Joint line tenderness	medial	
McMurray	pain medial	
Thessaly	pain medial in 5°	

	Physical therapy in la	st 3 m onths	
ì	No	162	

MRI

Medial meniscus





Lateral

meniscus

Kellgren-Lawrence (OA)

X-ray

Grade 1





Profile 18 Varnish processor



Consultation

Complaints	
Pseudo-locking	1
VAS rest (0-100)	6
VAS weight bearing (0-100)	8
IKDC score (0-100)	29
Physical exam	
Flexion	140°
Extension	5°
Joint effusion	122
Joint line tenderness	medial and lateral

click lateral pain medial in 5°

Physical therapy in las	to morning
No	17. AUTO-17.

McMurray

Medial meniscus

Horizontal tear



MRI

Lateral meniscus

Intact



X-ray

Kellgren-Lawrence (OA) Grade 1



pain lateral

# Profile 19 Agent / salesman



BMI 25

McMurray Thessaly

Consultation		
Complaints		
Pseudo-locking	828	
VAS rest (0-100)	10	
VAS weight bearing (0-100)	11	
IKDC score (0-100)	68	
Physical exam		
Flexion	135°	
Extension	0°	
Joint effusion	+	
Joint line tenderness	lateral	

MRI		X-ray
Medial meniscus	Lateral meniscus	Kellgren- Lawrence (OA)
Horizontal tear	Horizontal tear	Grade 3

Profile 20 Unemployed



Complaints	
Pseudo-locking	12
VAS rest (0-100)	42
VAS weight bearing (0-100)	42
IKDC score (0-100)	60

Consultation

Physical therapy in last 3 months

120°	
0	
medial	
-	
pain medial in 20°	

Physical therapy in	last 3 months
No	1

MRI

Medial meniscus

tear





Lateral

meniscus

Intact

X-ray

Kellgren-Lawrence (OA)

Grade 1



## **Supplement 2: Survey content**

## **Biographics**

Years of experience as orthopaedic surgeon:

- Less than 5 years
- Between 5 and 15 years
- More than 15 years

Field of expertise (more options possible):

- Knee surgery
- Hip surgery
- Shoulder/elbow surgery
- Back surgery
- Foot/ankle surgery
- Trauma surgery
- Arthroscopic surgery
- Sports injuries
- Infectiology
- Other: .....

In clinical decision making, what relative weighting do you give to evidence from your personal experience and of those around you, compared to evidence from clinical research?

Experience based

Published clinical research



## The evidence

The following statements concern treatment (meniscectomy versus physical therapy) in patients between 45 and 70 years old with a non-obstructive meniscal tear

I am completely up to date with the literature on this topic

- Strongly disagree
- Disagree
- Neither agree nor disagree
- Agree
- Strongly agree

I think the evidence on this topic is very strong

- Strongly disagree
- Disagree
- Neither agree nor disagree
- Agree
- Strongly agree

I feel very confident in choosing between both treatment options

- Strongly disagree
- Disagree
- Neither agree nor disagree
- Agree
- Strongly agree

In my opinion, <u>meniscectomy</u> is a good option for the initial treatment of patients between 45 and 70 years old with a non-obstructive meniscal tear

- Strongly disagree
- Disagree
- Neither agree nor disagree
- Agree
- Strongly agree

In my opinion, <u>physical therapy</u> is a good option for the initial treatment of patients between 45 and 70 years old with a non-obstructive meniscal tear

- · Strongly disagree
- Disagree
- Neither agree nor disagree
- Agree
- Strongly agree

## Patient profiles 1-20 (example profile 1)

In the next section you will be presented 20 patient profiles. On the basis of every profile we kindly ask you to answer 3 questions.

## Explanation of terms and abbreviations used:

## Complaints

Pseudo-locking

10

A "catching" sensation which inhibits moving but quickly disappears.
No true (irretrievable) knee locking.

## VAS pain (0-100)

 Visual analogue scale to express pain. A score of 0 corresponds to no pain at all and a score of 100 reflects the worst possible pain. This score is divided into a score at rest and one during weight bearing.

## IKDC (0-100)

 International Knee Documentation Committee (IKDC) 'Subjective Knee Form'. The maximum of 100 points reflects no restrictions in daily and sports activities and the absence of symptoms. A change of more than 8.8 points in IKDC score is considered to exceed the smallest detectable change. The mentioned score in the patient profile corresponds to the baseline score (before treatment).

## Physical exam

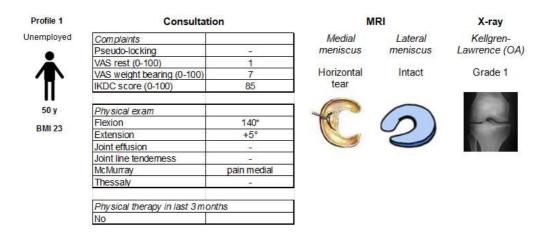
- Flexion of the knee; in degrees.
- Extension of the knee; in degrees. +5° means hyperextension, and -5° means a limitation of extension.
- Joint effusion; the presence of joint effusion. + means yes, means no.
- Joint line tenderness; the presence of medial or lateral joint line tenderness during compression.
- McMurray; expressed as the presence of pain, a click, or both.
- Thessaly test; expressed for 5° or 20° knee flexion. If the Thessaly test is positive (e.g. pain) in 5°, it is assumed that it is positive in 20°. If 20° is presented, the test in 5° was negative.

#### MRI

All MRIs were viewed by one radiologist and tears were classified according to the ISAKOS classification.

## X-ray (OA)

Osteoarthritis on Kellgren Lawrence scale. In this study patients with grade 4 were excluded. The miniature picture is a standardized image from the classification and does not represent the authentic X-ray of the described patient.



Would you prefer meniscectomy or physical therapy as treatment in this particular patient?

- Arthroscopic partial meniscectomy (APM)
- Physical therapy (PT)

What would you think that will be the effect of your treatment of choice on knee function after two years?

- Strong deterioration (at least 20 points on IKDC)
- Mild deterioration (10-20 points on IKDC)
- No relevant difference (-10 to +10 points on IKDC)
- Some improvement (10-20 points on IKDC)
- Strong improvement (at least 20 points on IKDC)

What will the outcome be if the other treatment would be applied?

- Strong deterioration (at least 20 points on IKDC)
- Mild deterioration (10-20 points on IKDC)
- No relevant difference (-10 to +10 points on IKDC)
- Some improvement (10-20 points on IKDC)
- Strong improvement (at least 20 points on IKDC)

## Patient characteristics

On this page we would like to ask you which of the following patient characteristics affect your treatment choice and if so, in which direction?

- Younger patients (approximately <45 years)
  - o APM
  - o PT
  - Unaffected

## The same lay-out was used for all following characteristics:

- Older patients (approximately >45 years)
- Normal BMI (18,5 25 kg/m2)
- Obesity (BMI>25 kg/m2)
- Absence of obstructive/locking complaints
- Presence of obstructive/locking complaints
- Medial tear
- Lateral tear
- Longitudinal-vertical (ISAKOS)
- Horizontal tear (ISAKOS)
- Radial tear (ISAKOS)
- Vertical flap tear (ISAKOS)
- Complex tear (ISAKOS)
- Bucket handle tear
- No-mild osteoarthritis (Kellgren Lawrence 0 2)
- Moderate-severe osteoarhritis (Kellgren Lawrence 3 4)
- Lower education level
- Higher education level
- Poor baseline physical function (IKDC approximately < 30)</li>
- Good baseline physical function (IKDC approximately > 50)
- Low activity level (Tegner 1-3)
- High activity levels (Tegner >3)
- Lower levels of pain (VAS < 7)</li>
- Higher levels of pain (VAS > 7)
- Male gender
- Female gender
- A patient's wish for practicing sports
- Traumatic etiology
- Degenerative etiology
- Failed conservative treatment

**Supplement 3: Characteristics of surgeons** 

Years of experience as orthopaedic surgeon	Number	Percentage
Less than 5 years	35	18.0
Between 5 and 15 years	57	29.4
More than 15 years	71	36.6
Resident orthopaedic surgery	30	15.5
Estimated number of performed knee arthroscopies during career:		
Less than 10	5	2.6
Less than 50	21	10.8
Between 50 and 150	33	17.0
More than 150	134	69.1
Fields of expertise (more options possible):		
Knee surgery	146	75.3
Hip surgery	107	55.2
Shoulder/elbow surgery	49	25.3
Back surgery	18	9.3
Foot/ankle surgery	35	18.0
Trauma surgery	79	40.7
Arthroscopic surgery	75	38.7
Sports injuries	69	35.6
Infectiology	11	5.7
Paediatric surgery	5	2.6
Hand/wrist surgery	5	2.6

## **Supplement 4: Opinion towards the literature**

In clinical decision making, what relative weighting do you give to evidence from your personal experience and of those around you compared to evidence from clinical research?	Chosen by all surgeons (%)	Chosen by experienced knee surgeons (%)	Chosen by other orthopaedic surgeons (%)
T Experience based	0.5	0	1.1
†	12.4	12.9	11.8
†	38.1	42.6	33.3
+	44.3	37.6	51.6
Published clinical research	4.6	6.9	2.2
I'm completely up to date with literature on this topic			
Strongly disagree	0.5	0	1.1
Disagree	5.2	0	10.8
Neither agree nor disagree	17	13.9	20.4
Agree	64.4	71.3	57
Strongly agree	12.9	14.9	10.8
The evidence on this topic is convincing			
Strongly disagree	0.5	0	1.1
Disagree	8.2	11.9	4.3
Neither agree nor disagree	17	14.9	19.4
Agree	63.9	63.4	64.5
Strongly agree	10.3	9.9	10.8
I feel very confident in choosing between both treatment options			
Strongly disagree	1	0	2.2
Disagree	6.7	5	8.6
Neither agree nor disagree	16.5	10.9	22.6
Agree	65.5	71.3	59.1
Strongly agree	10.3	12.9	7.5

In my opinion. meniscectomy is a good option for the initial treatment of patients between 45 and 70 years old with a non-obstructive meniscal tear

Strongly disagree	39.2	38.6	39.8
Disagree	49.5	47.5	51.6
Neither agree nor disagree	8.2	9.9	6.5
Agree	3.1	4	2.2
Strongly agree	0	0	0

In my opinion. physical therapy is a good option for the initial treatment of patients between 45 and 70 years old with a non-obstructive meniscal tear

Strongly disagree	1.5	2	1.1	
Disagree	7.2	10.9	3.2	
Neither agree nor disagree	13.9	16.8	10.8	
Agree	48.5	48.5	48.4	
Strongly agree	28.9	21.8	36.6	

Experienced knee surgeons are orthopaedic surgeons with at least 5 years of experience in knee surgery.

**Supplement 5: Results of the treatment choice affecting patient characteristics** 

Patient characteristics	Proportion of surgeons directed towards APM (%)	Proportion of surgeons directed towards PT (%)	Proportion of surgeons for whom characteristic did not influence treatment choice (%)
Higher education level	6	6	88
Lower education level	2	11	88
Male gender	10	5	85
Female gender	2	14	84
Medial tear	21	7	72
Lateral tear	11	26	63
A patient's wish for practicing sports	33	8	59
Normal BMI (18,5 - 25 kg/m2)	39	5	56
Higher levels of pain (VAS > 7)	29	15	56
Radial tear (ISAKOS)	26	20	54
Longitudinal-vertical (ISAKOS)	36	10	54
Good baseline physical function (IKDC approximately > 50)	30	19	52
Horizontal tear (ISAKOS)	7	42	51
Horizontal flap tear (ISAKOS)	38	16	46
High activity levels (Tegner >3)	49	6	45
Lower levels of pain (VAS < 7)	5	50	45
Vertical flap tear (ISAKOS)	51	7	43
Complex tear (ISAKOS)	26	31	43
Low activity level (Tegner 1-3)	1	63	36
Poor baseline physical function (IKDC approximately < 30)	10	56	34
No-mild osteoarthritis (KL 0 - 2)	61	8	31
Younger patients (approximately <45 years)	74	1	25
Traumatic aetiology	76	3	22
Obesity (BMI>25 kg/m2)	2	79	20
Presence of obstructive/locking complaints	82	3	15
Failed conservative treatment	82	3	15

Older patients (approximately >45 years)	1	87	13
Absence of obstructive/locking complaints	1	88	11
Degenerative aetiology	1	92	7
Bucket handle tear	94	0	6
Moderate-severe osteoarthritis (KL 3 - 4)	1	96	3

The percentages were generated based on information from the section 'Patient characteristics' from the survey (Supplement 2).

BMI = Body Mass Index; IKDC = International Knee Documentation Committee; ISAKOS = International Society of Arthroscopy, Knee Surgery and Orthopaedic Sports Medicine; KL = Kellgren Lawrence; VAS = Visual Analog Scale